Authors

Byron R. Brown

Research Division, San Jose, California

B.S. in Engineering Physics, 1965, University of California, Berkeley; M.S. in Physics, 1967, California Institute of Technology. Joined IBM Systems Development Division at San Jose for the summer of 1965 to work on computer generation of optical spatial filters. Joined the Research Division at San Jose in 1966, with assignment to assist the Systems Development Division in the development of an optical data storage system. Currently working on computer generation of holograms in the Research Division.

Praveen Chaudhari

Thomas J. Watson Research Center, Yorktown Heights, New York

B.S. in Metallurgy, 1961, Indian Institute of Technology, Kharagpur; M. S., 1963, and D.Sc., 1965, in Metallurgy, Massachusetts Institute of Technology. Was Research Assistant 1961-1965 and Research Associate 1965-1966 at M.I.T. Joined IBM at the Research Center in 1966 to work in the area of defects in crystalline solids, the phenomenon of superplasticity, and a variety of problems in thin films. In 1963 he worked for a short period with the Danish Atomic Energy Commission. Member, AIME, ASM and AAAS.

Mark L. Dakss

Thomas J. Watson Research Center, Yorktown Heights, New York

B.E.E., 1960, Cooper Union, New York; M. A. and Ph.D. in physics, 1962 and 1966, respectively, Columbia University, New York, New York. Was research assistant 1962-66 at Columbia Radiation Laboratory, Columbia University. Joined the Optical Physics Group at the Research Center in 1966 to work on problems in laser scanning and optical information processing, and continues to work in this area now. Member, Tau Beta Pi and American Physical Society.

Dennis Gabor

CBS Laboratories, Stamford, Connecticut

Dr.-Ing. in Electrical Engineering, 1927, Technische Hochschule, Berlin-Charlottenburg. Research Engineer 1927-33, Siemens & Halske, Berlin; 1934-48, British Thomson-Houston Co., Rugby, England; 1949-57, Mullard Reader in Electronics; 1958-67, Professor of Applied Electron Phyics and since 1967, Senior Research Fellow and Professor Emeritus in Imperial College of Science & Technology, University of London. Since 1967, Staff Scientist CBS Laboratories, Stamford, Connecticut. 1968-69, Visiting Professor, State University of New York, Stony Brook. President, Norbert Wiener International School of Cybernetics, Genova, Italy. Honors: 1956, Fellow of Royal Society; 1964, D.Sc. of University of London and Hon. Member of Hungarian Academy of Sciences; 1967 Thomas Young Medal of The Physical Society, London and Cristoforo Colombo Medal and Prize of the International Institute of Communications, Genova. 1968 Albert Michelson Medal of The Franklin Institute and Rumford Medal of the Royal Society.

Franklin Gracer

Thomas J. Watson Research Center, Yorktown Heights, New York

B.S. in Mathematics, 1954, College of the City of New York; graduate work at N.Y.U. Joined The Service Bureau Corporation in 1956 as a programmer trainee. Worked on a large variety of scientific customer applications before joining IBM Research where he is currently working on computer graphics methodology. Member, ACM.

Paul F. Heidrich

Thomas J. Watson Research Center, Yorktown Heights, New York

Associate degree in Electrical Engineering, 1961, Academy of Aeronautics, Long Island, New York. Joined IBM at the Research Center in 1961 to work on development of optical scanners. Currently working on a Real Time Image Processing System.

Peter M. Hirsch

Data Processing Division, Scientific Center, Houston, Texas

B.S. in Applied Mathematics and Engineering Physics, 1961; M.S., in Mathematics, 1963; Ph.D. in Mathematics, 1966, all at the University of Wisconsin. Teaching assistant 1961-1965 in Mathematics Department at the University of Wisconsin and instructor 1965-1966 in Mathematics Department at Pennsylvania State University. Joined IBM Scientific Center at Houston in 1966 to work in Mathematics. Currently working on digital holography and kinoforms. Member, ACM, MAA, AMS, and SIAM.

James A. Jordan, Jr.

Physics Department, Rice University, Houston, Texas

B.Sc. in Physics, 1958, Ohio State University; M.Sc. and Ph.D. in Physics, 1959 and 1964, respectively, University of Michigan. Was Physicist, Aeronautical Research Laboratories, Wright-Patterson AFB, 1960; Assistant Research Physicist, University of Michigan, 1961-64. Is now Assistant Professor of Physics at Rice University, with research interests in the emission spectroscopy of heavy ions using the beam-foil technique, and atomic collision physics. Consultant to the Houston Scientific Center of the IBM Data Processing Division since 1966, on optics and holography. Member, American Physical Society, Optical Society of America, American Association of Physics Teachers, American Geophysical Union, Sigma Xi, Pi Mu Epsilon, Phi Beta Kappa.

David P. Kennedy

Components Division, East Fishkill, New York

Member of Radiation Laboratory, MIT, 1940-42, engaged in the design of radar equipment. From 1942-58 was employed by Raytheon Manufacturing Company to work in the fields of microwave tubes, microwave communication systems, and semiconductor devices. Instructed at the Graduate School of Engineering, Northeastern University, 1953-58.

Joined the IBM Development Laboratory, Data Systems Division, Poughkeepsie, in 1958 as an Advisory Physicist in the mathematical analysis of boundary value problems relating to the design and development of semiconductor devices. Is currently a Senior Physicist and Manager of Mathematical Analysis, Semiconductor Device Theory at the East Fishkill laboratory. Member, American Physical Society.

Eric G. Lean

Thomas J. Watson Research Center, Yorktown Heights, New York

B.S. in Electrical Engineering, 1959, Cheng-Kung University, Taiwan; M.S. in Electrical Engineering, 1963, University of Washington; Ph.D. in Electrical Engineering, 1967, Stanford University. Was Research Assistant both at University of Washington (1961-1963) and Stanford University (1963-1967). Also was a research associate for 6 months in Hansen Laboratory, Stanford University after graduation. Joined IBM Research Center in September 1967 to work on laser applications, nonlinear optics and microwave acoustics for signal processings. Is currently active in microwave acoustic studies. Member, Sigma Xi.

Louis B. Lesem

Data Processing Division, Scientific Center, Houston, Texas

B.S. in Chemical Engineering, 1949, Purdue University. Was Research Engineer, 1952-1954, at Oak Ridge National Laboratory; Research Associate, 1954-1957, Texas Petroleum Research Committee, University of Texas, Austin; and Reservoir Engineer 1957-1962, Standard Oil Company of Texas, Houston. Joined IBM Data Processing Division at Houston in 1962 to work on a variety of Problems associated with the real-time computer complex at NASA Manned Spacecraft Center. Is currently project leader, holography project at Houston Scientific Center. Member, Sigma Xi, Tau Beta Pi, Omega Chi Epsilon, and Phi Lambda Upsilon.

Adolf W. Lohmann

University of California at San Diego, LaJolla, California

B.S., 1949; M.S., 1951; and Ph.D., 1953, all in Physics, University of Hamburg. From 1953 until 1963 on the faculty of the Technical University in Braunschweig. Sabbatical years at the Royal Institute of Technology in Stockholm (1958), and at IBM in San Jose (1961). From 1963 until 1968 at IBM Research in San Jose, and now Professor of Applied Electrophysics at UCSD, where he presently is building a graduate program in optics. Research interests in optics with emphasis on information processing and holography. Fellow, American Optical Society.

Robert A. Myers

Corporate Headquarters, Armonk, New York

A.B., 1958; A.M., 1959; Ph.D. in Applied Optics, 1963, all from Harvard University. Student employment with Bell Telephone Laboratories (summer, 1957), M.I.T. Lincoln Laboratory (summer, 1959) and Technical Operations/Research (consultant, 1962). Joined IBM Research Division in December, 1963. Has since studied laser applications and, particularly, modulation and deflection. In 1968 transferred to Armonk where he is on the staff of the Corporate Technical Committee. Member, Phi Beta Kappa, Sigma Xi and American Physical Society.

Richard E. Norwood

Systems Development Division, Boulder, Colorado

B.S., 1956; M.S., 1959; Sc.D., 1961; all in Mechanical Engineering, the Massachusetts Institute of Technology. After joining IBM in 1961 at the Endicott Laboratory for work in advanced mechanical technology, he completed assignments in printer development at Endicott and publishing systems development at the Boulder Laboratory. Presently an Advisory Engineer in reliability and serviceability at Boulder. Member, ASME.

Redmond R. O'Brien

Components Division, East Fishkill, New York

B.S. in Mathematics, 1953; M.S. in Mathematics, 1954, and Ph.D. in Mathematics, 1957, Massachusetts Institute of Technology. Joined Sylvania Electric in 1958 as a member of the Operations Research and Mathematical Analysis Department of the Applied Research Laboratory. Worked on communication and detection problems on noisy environments. Joined IBM in 1960, to work on the theoretical analysis of semiconductor devices and associated computational problems. Member Sigma Xi, American Mathematical Society, Mathematical Association of America, and American Statistical Association.

Robert V. Pole

Thomas J. Watson Research Center, Yorktown Heights, New York

Ph.D. in E.E. (equivalent degree), 1953, University of Zagreb, Yugoslavia. Subsequently worked with Radio Industrija in Zagreb, with AWB in Dachau, and with ELNA, G. M. bH in Hamburg. In 1957 joined the Electronics Laboratory of General Electric Company, where he was primarily engaged in analytical aspects of thermoplastic recording. In June, 1961, joined IBM Research; subsequently, has worked in the field of optics and laser applications. Concurrently, completed course requirements for Ph.D. (Physics) at Syracuse University. Now manager of the optical physics research group. Member, Optical Society of America and IEEE.

Carl G. Powell

Thomas J. Watson Research Center, Yorktown Heights, New York

Attended the University of Arizona. Served in the U. S. Air Force, Instrument Laboratory from 1960 to 1965. Joined IBM in 1966 at the Research Center, Yorktown.

Melbourne E. Rabedeau

Systems Development Division, San Jose, California

B.S. in Physics, 1951, University of Wisconsin; M.S. in Optics, 1959, University of Rochester, Rochester, New York. Worked at Eastman Kodak Company, 1954-1959, and the Institute of Optics of the University of Rochester, 1959-1960. Joined IBM in San Jose in 1960 and worked on optical image evaluation and optical technology for optically addressed files. Currently, manager of the Optical Technology Department in San Jose. Member, Optical Society of America and the Society of Photographic Scientists and Engineers.

Alvin J. Surkan

Thomas J. Watson Research Center, Yorktown Heights, New York

B.Sc. in Physics, 1954, U. of Alberta; M.A. in Physics, 1956, U. of Toronto; Ph.D. in Physics, 1959, U. of W. Ontario, London, Canada. Awarded National Research Council Postdoctorate Fellowship with Department of Physics, University of Alberta, 1959-61. Research in sub-audio geomagnetic field variations with Defense Research Board of Canada, 1961-62. Faculty of U. of British Columbia, 1962-63. Joined IBM at New York, 1963, for mathematics and applications of scientific computation in geophysics. Transferred to Physical Sciences Department of IBM Research at Yorktown Heights, 1965, for environmental science research. Professional interests include research in geophysics, hydrology and algorithms for data interpretation by nonlinear optimization and symbolic computation.

Raymond E. Tibbetts

Thomas J. Watson Research Center, Yorktown Heights, New York

B.A. in Mathematics, 1951, Clark University, Worcester, Mass.; did graduate work at the University of Rochester, New York; has worked as lens designer for the following companies: Bausch & Lomb, Inc. (1951-52), American Optical Co. (1952-56), and Wollensak Optical Co. (1958-62). Joined IBM Federal Systems Division, Owego, (1956-58) and designed optical system for the bombsight presently used in B-52 bombers. Subsequently at the General Products Division, Rochester, Minnesota (1962) and transferred to present position as Research Staff Member in 1964. Has designed lens systems for optical scanners (1418, 1975, 1285, 1288, 1275) developed by IBM and currently is designing the reduction lenses for the production of microelectronics. Received patent award and is a member of the Optical Society of America.

Harold Wieder

Research Division, San Jose, California

B.S. in Optics, 1950; M.S. in Physics, 1957, University of Rochester; Ph.D. in Physics, 1964, Case Institute of Technology. Staff member, RCA Laboratories, 1950-1954. Research Assistant, University of Rochester, 1954-1957. Research Physicist, Union Carbide Research Laboratories, 1957-1961. Instructor in physics, Case Institute of Technology, 1961-1963. Joined IBM at the Research Center in 1963. Has worked on intra-cavity laser processes, gas discharges, real-time optical processing, and is presently doing injection laser studies. Member, American Physical Society and Sigma Xi.

Janusz S. Wilczynski

Thomas J. Watson Research Center, Yorktown Heights, New York

B.S. in Mechanical Engineering 1954, Mining Academy, Cracow, Poland; M.Sc. in Physics, 1957, Yagello-Vian University of Cracow; Ph.D. in Physics-Optics, 1961, Imperial College, University of London. After one year with Watson Ltd., Barnet, Hets, England, he joined IBM Research in 1962. Since 1963 he has been manager of Technical Optics at the Research Center. His main line of work is in application of computers to optics, lens design and manufacture, photographic processes, etc. Member, Optical Society of America.

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